## **Listing of Claims**

1. (Original) A computer readable medium having a data structure stored thereon, said data structure being read and processed by a computer, said data structure for use with <u>handwritten electronic ink</u>, said handwritten electronic ink being mapped to a virtual space and later to an output space, said data structure comprising:

a first portion storing data; and

a second portion storing a first mapping of the data to a virtual space,

wherein said first mapping is of the form of:

$$X'=ax+by+c$$

$$Y' = dx + ey + f$$

and a second mapping to said output space is of the form of:

$$X'' = gx' + hy' + i$$

$$Y'' = jx' + ky' + m$$

wherein said first mapping and said second mapping are as:

$$X'' = (ga + hd)x + (gb + he)y + gc + hf + i$$

$$Y'' = (ja + kd)x + (jb+ke)y + jc + kf + m.$$

- 2. (Original) The computer readable medium according to claim 1, wherein the first and second portions are part of an ink object.
- 3. (Original) The computer readable medium according to claim 1, wherein the data include coordinate information for an ink stroke.
- 4. (Original) The computer readable medium according to claim 1, wherein the data include coordinate information for multiple ink strokes.
- 5. (Original) The computer readable medium according to claim 1, wherein the mapping is a set of equations.
- 6. (Original) The computer readable medium according to claim 1, wherein the mapping is a set of equations of the form

$$*\underline{X}' = \underline{a}Ax + \underline{b}By + \underline{c}C$$

$$y\underline{Y}' = \underline{d}Dx + \underline{e}Ey + \underline{f}F$$

where (x,y)(X,Y) is a coordinate of the data and (x',y')(X',Y') is a coordinate of the

virtual space.

- 7. (Cancelled)
- 8. (Original) The computer readable medium according to claim 1, wherein the <u>first mapping</u> is a set of coefficients.
- 9. (Original) The computer readable medium according to claim 1, wherein the first portion is part of an ink stroke and the second portion is part of a property table containing properties for the ink stroke.
- 10. (Original) The computer readable medium according to claim 1, wherein the property table includes a third portion for storing a second said second mapping of the data to a second virtual space.
- 11. (Withdrawn) A method for creating a data structure, said method comprising the steps of:

receiving a first ink stroke;

determining a mapping of coordinates associated with the first ink stroke to a virtual space; and

creating the data structure that associates the first ink stroke with the mapping.

- 12. (Withdrawn) The method according to claim 11, further comprising the step of: after receiving the ink stroke, creating an empty ink object.
- 13. (Withdrawn) The method according to claim 11, further comprising the step of: after determining the mapping, adding at least one additional ink stroke, the additional ink stroke sharing the mapping associated with the first ink stroke.
- 14. (Withdrawn) The method according to claim 11, wherein the determining a mapping step further comprises the steps of:

determining a native coordinate system;

determining a virtual coordinate system; and,

determining coefficients to transform from the native coordinate system to the virtual coordinate system.

15. (Withdrawn) The method according to claim 11, wherein said determining a mapping step results in a determination of A, B, C, D, E, and F satisfying

$$x' = Ax + By + C$$

$$y' = Dx + Ey + F$$

where (x,y) is a coordinate of the native coordinate system and (x',y') is a coordinate of the virtual coordinate system.

16. (Withdrawn) The method according to claim 11, wherein said determining a mapping results in the combination of a first mapping having the form of

$$X'=ax+by+c$$

$$Y' = dx + ey + f$$

and a second mapping in the form of

$$X'' = gx' + hy' + i$$

$$Y'' = jx' + ky' + m$$

into a third mapping having the form of

$$X'' = (ga + hd)x + (gb + he)y + gc + hf + i$$

$$Y'' = (ja + kd)x + (jb+ke)y + jc + kf + m.$$

17. (Withdrawn) A method of using a data structure comprising the steps of:

reading a data structure containing at least one ink stroke;

reading first transform information from a transform table; and

applying a transform based on at least the first transform information to the at least one ink stroke.

18. (Withdrawn) The method according to claim 17, further comprising the steps of:

after the reading transformation information step, determining second transform information; and

combining the second transform information with the first transform information prior to applying the transform to the ink stroke.

19. (Withdrawn) A system for creating a data structure comprising:

an input receiving ink stroke information in native coordinates from a native coordinate system;

a processor determining a transform between the native coordinate system and a virtual coordinate system; and

a storage for storing a data structure containing the ink stroke and the transform.

20. (Withdrawn) The system according to claim 19, wherein the data structure

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contains multiple ink strokes that are associated with the transform.

- 21. (Withdrawn) The system according to claim 20, wherein the association between the ink strokes and the transform is an index referencing a transform table.
  - 22. (Withdrawn) A system for using a data structure comprising: an ink stroke;
  - a first transform mapping of coordinates of the ink stroke to a virtual coordinate system;
  - a storage storing said data structure and said first transform mapping
- a processor reading the ink stroke and the first transformation mapping and applying at least the first transform mapping to the ink stroke; and,

an output for outputting the transformed ink stroke.

- 23. (Withdrawn) The system according to claim 22, wherein the output includes at least one of a printer and a display.
- 24. (Withdrawn) The system according to claim 22, wherein the transformation mapping includes coefficients for equations that map coordinates of the ink stroke to a virtual coordinate system.
- 25. (Withdrawn) The system according to claim 22, wherein the processor combines a second transform mapping with the first transform mapping prior to application to the ink stroke.
- 26. (Withdrawn) The system according to claim 22, further comprising a handwriting recognition module that attempts to recognize the ink stroke in its original coordinates.
- 27. (New) The computer readable medium according to claim 1, wherein the property table includes a third portion for storing said second mapping of the data to a second virtual said output space.